

Appendix table 7-18

Correct answers to scientific terms and concept questions in "factual knowledge of science, scale 2," by respondent characteristic: 2008

(Percent)

Characteristic	<i>Which one of the following is NOT an example of erosion?</i>	<i>Traits are transferred from generation to generation through the...</i>	<i>How do most fish get the oxygen they need to survive?</i>	<i>What property of water is most important for living organisms?</i>	<i>Which of the following is a key factor that enables an airplane to lift?</i>
All adults (<i>n</i> = 2,021)	54	79	75	68	53
Sex					
Male (<i>n</i> = 918)	63	78	80	75	65
Female (<i>n</i> = 1,103)	45	80	70	61	43
Formal education					
<High school (<i>n</i> = 283)	39	59	54	44	30
High school graduate (<i>n</i> = 632)	49	76	72	62	47
Some college (<i>n</i> = 550)	55	83	81	71	59
Baccalaureate (<i>n</i> = 356)	64	92	83	81	63
Graduate/professional degree (<i>n</i> = 200)	68	86	83	84	71
Science/mathematics education ^a					
Low (<i>n</i> = 1,199)	47	74	71	60	45
Middle (<i>n</i> = 340)	64	88	79	77	62
High (<i>n</i> = 395)	68	92	88	88	76
Family income (quartile) ^b					
Top (<i>n</i> = 381)	65	87	86	82	67
Second (<i>n</i> = 485)	60	86	77	70	56
Third (<i>n</i> = 411)	56	78	75	65	52
Bottom (<i>n</i> = 506)	38	68	64	56	41
Age (years) ^b					
18–24 (<i>n</i> = 173)	48	84	74	71	56
25–34 (<i>n</i> = 346)	48	82	76	72	51
35–44 (<i>n</i> = 377)	47	80	77	69	42
45–54 (<i>n</i> = 421)	61	80	79	70	56
55–64 (<i>n</i> = 335)	64	82	77	69	62
≥65 (<i>n</i> = 354)	50	68	64	53	53
Verbal ability ^c					
0–4 (<i>n</i> = 364)	34	56	57	48	33
5 (<i>n</i> = 290)	48	72	72	57	45
6 (<i>n</i> = 363)	52	84	79	74	56
7 (<i>n</i> = 297)	62	93	79	75	58
8–10 (<i>n</i> = 380)	70	91	88	83	72
Trend factual knowledge of science scale (quartile) ^d					
Top (<i>n</i> = 559)	74	94	89	89	81
Second (<i>n</i> = 566)	58	84	79	75	56
Third (<i>n</i> = 521)	42	75	72	55	42
Bottom (<i>n</i> = 375)	30	54	49	37	20

Appendix table 7-18

Correct answers to scientific terms and concept questions in "factual knowledge of science, scale 2," by respondent characteristic: 2008

(Percent)

Characteristic	<i>For which reason may people experience shortness of breath more quickly at the top of a mountain than along a seashore?</i>	<i>A farmer thinks that the vegetables on her farm are not getting enough water. Her son suggests that they use water from the nearby ocean to water the vegetables. Is this a good idea?</i>	<i>A solution of hydrochloric acid (HCl) in water will turn blue litmus paper red. A solution of the base sodium hydroxide (NaOH) in water will turn red litmus paper blue. If the acid and base solutions are mixed in the right proportion, the resulting solution will cause neither red nor blue litmus paper to change color. Explain why the litmus paper does not change color in the mixed solution.</i>	<i>Lightning and thunder happen at the same time, but you see the lightning before you hear the thunder. Explain why this is so.</i>	Factual knowledge of science, scale 2 ^e
All adults (n = 2,021)	67	84	20	44	60
Sex					
Male (n = 918)	73	87	25	55	67
Female (n = 1,103)	61	82	16	34	55
Formal education					
<High school (n = 283)	40	69	3	12	39
High school graduate (n = 632)	60	84	11	38	56
Some college (n = 550)	69	85	20	45	63
Baccalaureate (n = 356)	88	93	38	65	74
Graduate/professional degree (n = 200)	81	93	42	72	76
Science/mathematics education ^a					
Low (n = 1,199)	58	81	9	33	53
Middle (n = 340)	76	89	27	55	69
High (n = 395)	88	96	50	71	80
Family income (quartile) ^b					
Top (n = 381)	83	93	29	61	73
Second (n = 485)	71	89	27	52	65
Third (n = 411)	65	86	16	37	59
Bottom (n = 506)	48	73	13	28	47
Age (years) ^b					
18–24 (n = 173)	61	79	23	42	60
25–34 (n = 346)	66	80	23	52	61
35–44 (n = 377)	66	86	20	45	59
45–54 (n = 421)	70	88	21	43	63
55–64 (n = 335)	73	89	19	45	64
≥65 (n = 354)	61	83	15	35	54
Verbal ability ^c					
0–4 (n = 364)	38	66	6	21	40
5 (n = 290)	56	80	10	31	52
6 (n = 363)	70	89	24	43	63
7 (n = 297)	80	92	24	55	69
8–10 (n = 380)	85	93	35	65	76

Appendix table 7-18

Correct answers to scientific terms and concept questions in "factual knowledge of science, scale 2," by respondent characteristic: 2008

(Percent)

Characteristic	<i>For which reason may people experience shortness of breath more quickly at the top of a mountain than along a seashore?</i>	<i>A farmer thinks that the vegetables on her farm are not getting enough water. Her son suggests that they use water from the nearby ocean to water the vegetables. Is this a good idea?</i>	<i>A solution of hydrochloric acid (HCl) in water will turn blue litmus paper red. A solution of the base sodium hydroxide (NaOH) in water will turn red litmus paper blue. If the acid and base solutions are mixed in the right proportion, the resulting solution will cause neither red nor blue litmus paper to change color. Explain why the litmus paper does not change color in the mixed solution.</i>	<i>Lightning and thunder happen at the same time, but you see the lightning before you hear the thunder. Explain why this is so.</i>	Factual knowledge of science, scale 2 ^e
Trend factual knowledge of science scale (quartile) ^d					
Top (<i>n</i> = 559)	89	95	46	77	82
Second (<i>n</i> = 566)	77	89	18	50	65
Third (<i>n</i> = 521)	54	82	7	24	50
Bottom (<i>n</i> = 375)	31	63	2	11	33

^aLow = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses. Categories do not add to total *n* because "don't know" and "refused" responses not shown.^bCategories do not add to total *n* because "don't know" and "refused" responses not shown.^cMeasure based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge completed by 1,694 survey respondents. Categories represent number of correct responses.^dQuartiles based on percentage of nine questions in trend factual knowledge of science scale answered correctly. See notes to appendix table 7-8 for questions.^ePercentage of nine questions in "factual knowledge of science, scale 2" answered correctly; questions are columns in this table. For complete questions, see appendix table 7-17.

NOTES: Seven of nine questions multiple choice. "Don't know" responses and refusals to respond counted as incorrect.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2008).

Science and Engineering Indicators 2012